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EXAMINER

COSIMANO, EDWARD R

ART UNIT PAPER NUMBER

3639

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/633,249

Applicant(s)

OUIMET, KENNETH J.

Examiner

Edward R. Cosimano

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-7 is/are pending in the application.
4a) Of the above claim(s) none is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1 and 3-7 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 7/31/03 & 8/4/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

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1. In view of the following new grounds of rejection, the finality of the last Office action mailed 09 May 2005 is withdrawn.
2. Applicant's claim for the benefit of an earlier filing data under 35 U.S.C. § 119(e) and 35 U.S.C. § 120 is acknowledged.
3. The combined sheets of drawings containing figs 1-7, 9 & 14 as filed 31 July 2003 and containing figs. 8, 11-13, 15 & 16 as filed 04 August 2004 are acceptable.
4. The disclosure is objected to because of the following informalities:

A) applicant must update:

(1) the continuing data on page 1,

with the current status of each of the referenced applications, e.g., --now abandoned--, or --now patent #?--, or --which is abandoned and now serial number #?--, etc.

B) it is noted that applicant has used the letter " ϕ " inconsistently in the specification, since as can be seen in paragraph numbers 14 & 99, the letter " ϕ " is used to represent the "price index" that has a first equation, where as can be seen in paragraph numbers 84, 85, 104, 117, 125, 128, 149, 151, 152, 153, 155, 157, 158, 159, 161 & 163 the letter " ϕ " is used to represent the "constraint function" that has a second equation that is different from first equation, and therefore it is unclear which of these equations is used in the "effective objective function" of paragraph numbers 110, 140 & 161 or is referenced in paragraph numbers 149, 151, 152, 153, 155, 157, 158, 159, 161 & 163 with the designations of " ϕ^{targ} " or " ϕ_i^{bound} ", or " ϕ " or " ϕ_i " or " ϕ_j ". It is further noted that since in the context of the specification, see paragraph numbers 14 & 99, the "price index" may in fact be a "constraint function", applicant designations in paragraph number 111, 151, 152, 153, 155, 157, 158, 159, 161, 163 that the letters " ϕ^{targ} " or " ϕ_i^{bound} " or " ϕ " or " ϕ_i " or " ϕ_j " are a "constraint function" does not solve this problem.

C) it is noted that the formula used for the "Price index" as presented in paragraph number 14 is latter inconsistently identified as the formula used for the "Price image" in indicated in paragraph number 99.

Appropriate correction is required.

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4. The specification and drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification or drawings. Applicant should note the requirements of 37 CFR § 1.52, § 1.74, § 1.75, § 1.84(o,p(5)), § 1.121(b-f).

5. Claims 1 & 3-7 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5.1 In regard to the following rejection, it is noted that "We are not persuaded by any sound reason why, at any time before the patent is granted, an applicant should have limitations of the specification read into a claim where no express statement of the limitation is included in the claim.", In re Prater, 56 CCPA 1381, 1395-96, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (1969). Hence, in regard to claim 1:

A) and how the phrases "selecting said primary goal of said enterprise planning model, said primary goal being represented by a primary objective function, said primary objective function depending upon a set of operational variables" and "representing said strategic constraint by a constraint function, said constraint function depending upon a subset of said operational variables", are related to the "enterprise planning mode" recited as the utility on the claimed invention in the preamble or the function of managing the enterprise in the last two lines of claim 1, since, it is noted that the language of these limitations does not require that either the "set of operational variables" or "subset of said operational variables" for which the "primary objective function" and the "constraint function", respectively, are dependent to be tied to the "operational variables" of the enterprise that is being modeled and hence would not produce a meaningful result that may be used as a planning model to manage an enterprise.

B) and how the phrase "optimizing said effective objective function over a range of weighting factors for said constraint function to obtain operational decisions for said operational variables, said optimizing operation optimizing said effective objective function for each of said weighting factors in said range", would either optimize the "effective objective function" or "operating decisions for the operational variables", since

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is described the "effective objective function" is $\Pi_{\text{eff}} = \Pi - (\phi * \psi)$, where Π is disclosed as a constant that equals $\sum Q_i * (P_i - C_i)$ for $i = 1$ to n , and ϕ is disclosed as a constant that equals $\sum Q_i * P_i$ for $i = 1$ to n , because as disclosed the values of the variables Q , P and C for any item "i" do not vary. Hence, the value of Π_{eff} relative to Π would be a straight line with the difference between the being solely dependent on the value of ψ which is varied with in a range of values. In view of the above reasoning the value of Π_{eff} could not be optimized as this term would be understood by one of ordinary skill and "operating decisions for the operational variables" can not be obtained.

C) and how the weighting factors ψ would affect the primary objective function Π which a disclosed equals $\sum Q_i * (P_i - C_i)$ for $i = 1$ to n , and hence the value of the "primary objective function" or the value of Π does not depend on either (1) the value of ψ or a variable value for the variables Q , P and C which for any item "i" do not vary.

D) and how a graphical view of the \$ value of (primary objective function) Π verses the \$ values of (constraint function) ϕ for each value ψ as set forth in the last subsection of this claim could be used to manage an enterprise since as disclosed the value of Π does not depend on the value of ψ and there are many different combinations of the values of Q , P and C which for any item "i" that would produce the same resultant value for Π .

5.2 Claims not specifically mentioned above, inherit the defects of the base claim through dependency. For the above reason(s), applicant has failed to particularly point out what is regarded as the invention.

6. 35 U.S.C. § 101 reads as follows:

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title".

6.1 Claims 1 & 3-7 are rejected under 35 U.S.C. § 101 because the invention as claimed is directed to non-statutory subject matter.

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6.1.1 For the purposes of the following analysis it is noted that:

A) in regard to how claims are to be interpreted by the U.S. Patent & Trademark Office when determining whether or not the claims recite statutory subject matter the Court of Customs and Patent Appeals (CCPA) which is the predecessor of the Court of Appeals for the Federal Circuit (CAFC) set forth that “This passage has sometimes been misconstrued as a “rule” or “definition” requiring that all processes, to be patentable, must operate physically upon substances. Such a result misapprehends the nature of the passage quoted as dictum, in its context, and the question being discussed by the author of the opinion. To deduce such a rule from the statement would be contrary to its intendment which was *not to limit* process patentability *but to point out that a process is not limited to the means used in performing it*” and again “the claims are to be given their broadest reasonable interpretation consistent with the specification during examination of a patent application”, and again “We are not persuaded by any sound reason why, at any time before the patent is granted, an applicant should have limitations of the specification read into a claim where no express statement of the limitation is included in the claim.”, In re Prater, 56 CCPA 1381, 1395-96, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (1969). Where the broadest reasonable interpretation was latter further defined by the CAFC to be:

(1) different from the way claims are to be interpreted by the Court in infringement suits, In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997) (The court held that the PTO is not required, in the course of prosecution, to interpret claims in applications in the same manner as a court would interpret claims in an infringement suit. Rather, the “PTO applies to verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in applicant’s specification.”); and

(2) limited to “The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would

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reach.”, In re Cortright, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999)”,

B) further in regard to the nature of statutory subject matter the Supreme Court in Diamond, Commissioner of Patents and Trademarks v. Diehr and Lutton, 209 USPQ 1, 9, (US SupCt, 1981) makes the following statement, “Our earlier opinions lend support to our present conclusion that a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula, computer program or digital computer.”, from this statement it can be seen that the manner in which a process or machine may be implemented or may not be implemented is not a factor that may be used to determine if the claim as a whole recites statutory subject matter.

C) the CCPA further held that “We view the results here as being similar to those in Gelnovatch -- a simulation of something physical is produced by a process akin to mathematical modeling. Each and every step in these claims involves or intimately relates to mathematical operations; we can view the end product in this case only as a mathematical result.”, and again “These claims are directed to the process of cross-correlation in the abstract. They are not limited to any particular art or technology, unless pure mathematics is considered as an art or technology. The "signals" processed by the inventions of claims 10-12 may represent either physical quantities or abstract quantities; the claims do not require one or the other. The claims thus dominate the particular method of cross-correlation in any and all arts. They are classic examples of an attempt to embrace the algorithm or scientific truth itself rather than a particular application.”, In re Walter, 205 USPQ 397, 409 (CCPA 1980) {emphasis added}.

6.1.2 At this point, it is noted at this point that the CAFC has held in AT & T Corp. v. Excel Communications Inc. 50 USPQ2d 1447 @ 1452 (CAFC 1999) that “[1] In both Alappat and State Street, the claim was for a machine that achieved certain results. In the case before us, because Excel does not own or operate the facilities over which its calls are placed, AT & T did not charge Excel with infringement of its apparatus claims, but limited its infringement charge to the specified method or process claims. Whether stated implicitly or explicitly, we consider the scope of Section 101 to be the same regardless of the form -- machine or process -- in which a particular claim is drafted. See, e.g., In re Alappat, 33 F.3d at 1581, 31 USPQ2d at 1589 (Rader,

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J., concurring) ("Judge Rich, with whom I fully concur, reads Alappat's application as claiming a machine. In fact, whether the invention is a process or a machine is irrelevant. The language of the Patent Act itself, as well as Supreme Court rulings, clarifies that Alappat's invention fits comfortably within 35 U.S.C. Section 101 whether viewed as a process or a machine."); *State Street*, 149 F.3d at 1372, 47 USPQ2d at 1600 (" [F]or the purposes of a Section 101 analysis, it is of little relevance whether claim 1 is directed to a 'machine' or a 'process.' . . . "). Furthermore, the Supreme Court's decisions in *Diehr*, *Benson*, and *Flook*, all of which involved method (i.e., process) claims, have provided and supported the principles which we apply to both machine- and process-type claims. Thus, we are comfortable in applying our reasoning in *Alappat* and *State Street* to the method claims at issue in this case." {emphasis added}, hence, both process and machine claims are to be treated the same and not to be treated differently based on the how the claim is drafted.

6.1.3 The instant claims recite a method comprising a series of steps to be performed, (claims 1 & 3-7), which has a disclosed practical application in the technological or useful arts. Further, the instant claims do not merely define either a computer program, a data structure, non-functional descriptive material, (i.e. mere data) or a natural phenomenon.

6.1.4 In regard to claims 1 & 3-7, the invention as set forth in these claims merely describes:

A) as disclosed applicant has invented a method of operating a computer to model an enterprise. To this end, a primary goal of the enterprise is represented as a mathematical function that is dependent on operation variables, $(\Pi = \sum Q_i * (P_i - C_i))$ for $i = 1$ to n as disclosed in paragraph number 81) and a constraint function for the enterprise is represented as a mathematical function dependent on operation variables, $\phi = \sum Q_i * P_i$ for $i = 1$ to n as disclosed in paragraph number 85). Next the mathematical functions that represent the "primary goal" and constraint function" are combined to form a single equation, (see equation number 5 below as disclosed in paragraph number 110) that is optimized over a range of weighting values. The allegedly optimized effective objective function is the used to determine and plot a number of points on a graph of the \$ value of Π_{eff} verses the \$ value of ϕ for the various values of ψ . See:

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Paragraph number 14: equ. 1:

$$\text{Price Index} = \phi = (\sum w_i * (P_i / \bar{P}_i)) / N \text{ for } i = 1 \text{ to } n.$$

Paragraph number 17: equ. 2:

$$\text{Price Image} = \text{SUM} (w_i * ((US_i * [C_i]) - (US_i * [P_i]))$$

Paragraph number 81: equ. 3:

$$\text{Primary Goal or Objective Function} = \Pi = \sum Q_i * (P_i - C_i) \text{ for } i = 1 \text{ to } n.$$

Paragraph number 85: equ. 4:

$$\text{Constrain Function} = \phi = \sum Q_i * P_i \text{ for } i = 1 \text{ to } n.$$

Paragraph number 110: equ. 5:

$$\text{Effective Objective Function (EOF)} = \Pi_{\text{eff}} = \Pi - (\phi * \psi) \text{ or}$$

$$\text{EOF} = \Pi_{\text{eff}} = (\sum Q_i * (P_i - C_i)) - (\psi * (\sum Q_i * P_i) \text{ for } i = 1 \text{ to } n; \text{ or}$$

$$\text{EOF} = \Pi_{\text{eff}} = (\sum Q_i * P_i) - (\sum Q_i * C_i) - (\psi * \sum Q_i * P_i) \text{ for } i = 1 \text{ to } n; \text{ or}$$

$$\text{EOF} = \Pi_{\text{eff}} = (1 - \psi) * (\sum Q_i * P_i) - (\sum Q_i * C_i) \text{ for } i = 1 \text{ to } n.$$

Where in the above equations:

 w_i is a weighting value for item i ; P_i is price of item i ; \bar{P}_i is the average price of item i ; C_i is the unit cost of item i ; US_i is the forecasted units sales at price P_i for item i ; Q_i is the predicted demand for an item based on price P_i and cost C_i for item i ; N, n is the total number of items; and

ψ is a weighting value that is varied between ψ^{\min} and ψ^{\max} by a step $\delta\psi$ and is estimated ψ^{est} when a scenario does not have a null value between ψ^{\min} and ψ^{\max} .

Hence, since the claims do not require that above mathematics be representative of the real world or to be applied to the real world, then the invention of claims 1 & 3-7 is directed to an abstract idea of processing numbers that is not tied to a practical application because the process as

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recited in these claims does not require that the result of either the claim as a whole or the manipulations of data as recited in these claims be applied in any manner so as to be tangibly used in a concrete manner and hence to produce a useful concrete and tangible result, that is a concrete and tangible application with in the technological or useful arts.

6.1.5 It is further noted that applicant has not recited in these claims a specific process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, which is either:

- A) altered or changed or modified by the invention recited in claims; or
- B) utilizes the result of the invention recited in these claims; or
- C) is operated or controlled by the result of the invention recited in these claims.

6.1.6 It is further noted in regard to claims 1 & 3-7, that as claimed applicant has not claimed:

A) pre computer processing, since the claims fail to recited that the data, which originates from an unknown source, is manipulated or transformed/changed before it is processed by the claimed invention; or

B) post computer processing, since the claims fail to recited that the data which represents the result of the claimed manipulation, is either manipulated or used nor changed by any device after it has been processed by the claimed invention; or

C) an actual practical use of the claimed invention by any physical system or device or method outside of the claimed invention other than a statement of the intended use of the claimed invention; or

D) process steps or physical acts/operations by the claimed invention that would affect the internal operation of a computer/machine as were found to be statutory in either In re McIlroy 170 USPQ 31 (CCPA, 1971) or In re Waldbaum 173 USPQ 430 (CCPA, 1972); or

E) process steps or physical acts/operations by the claimed invention that would be considered as going beyond the manipulation of “abstract ideas” as were found to be non-statutory in In re Warmerdam 31 USPQ2d 1754 (CAFC, 1994); or

F) a concrete and tangible practical application of either:

- (1) the invention as a whole; or

(2) the final results of the manipulations/actions with in the technological or useful arts;

note In re Sarkar 200 USPQ 132 (CCPA, 1978) where the process step of “constructing said obstruction within the actual open channel at the specified adjusted location indicated by the mathematical model” was held to be so tenuous connected to the remaining process steps as to not be a process with in the scope of 35 U.S.C. § 101.

Hence, the invention of claims 1 & 3-7 is merely directed to an hypothetical mental exercise that manipulates an abstract idea of processing abstract numbers that are not related to an enterprise for which that is being modeled or would affect the operation of the modeled enterprise because the resultant numbers are not required to be physically implemented by the claimed invention and hence is with out a claimed concrete and tangible practical application of the abstract idea, (note In re Beauregard 35 USPQ2d 1383 (CAFC 1995) and the associated claims of U.S. Patent 5,710,578; and State Street Bank & Trust Co. v. Signature Financial Group Inc. 47 USPQ2d 1596 (CAFC 1998)).

6.1.7 It is further noted that the type/nature of either the data or the calculated numbers does not affect the operation of the claimed invention and hence are considered to be non function descriptive material, (note In re Gulack, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983)).

6.1.8 In practical terms, claims define nonstatutory processes if they:

A) consist solely of mathematical operations without some claimed practical application (i.e., executing a “mathematical algorithm”); or

B) simply manipulate abstract ideas, e.g., a bid (Schrader, 22 F.3d at 293-94, 30 USPQ2d at 1458-59) or a bubble hierarchy (Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759),

without some claimed practical application of the mathematics or abstract idea.

6.1.9 In view of the above analysis claims 1 & 3-7, as a whole, are directed to an hypothetical mental exercise that merely manipulates mathematics or an abstract idea without a claimed concrete and tangible practical application of the mathematics or abstract idea, and hence are directed to non-statutory subject matter.

7. The following is an Examiner's Statement of Reasons for Allowance over the prior art:

A) the prior art, for example:

(1) Greene (WO 92/22021) discloses that the weighting factors may be used during optimization of variables from an initial value to values that represent a desired operating status for a particular process.

(2) O'Brien (WO 95/26007) discloses modeling an enterprise by combining a selected a primary goal of the enterprise and the strategic constraints of the enterprise as indicated by the operational variables for the enterprise in to an effective function that is optimized by trying one or more various different models/scenarios for the operating variables and then implementing the optimal solution.

B) however, in regard to claim 1, the prior art does not teach or suggest that the weighting variable that represents the affects of the strategic constraint on the primary goal in an effective objective function are varied in order to obtain the operating variables that would optimized effective objective function and then are used to determine and plot a number of points on a graph of the \$ value of Π_{eff} verses the \$ value of ϕ for the various values of ψ in order to make management decisions. Claims 3-7 are allowable for the same reason.

8. Response to applicant's arguments.

8.1 All rejections and objections of the previous Office action not repeated or modified and repeated here in have been over come by applicant's last response.

9. The shorten statutory period of response is set to expire 3/2 (three / two) months from the mailing date of this Office action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward Cosimano whose telephone number is (571) 272-6802. The examiner can normally be reached Monday through Thursday from 7:30am to 6:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Weiss, can be reached on (571) 272-6812. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-3600.

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10.1 The fax phone number for UNOFFICIAL/DRAFT FAXES is (571) 273-6802.

10.2 The fax phone number for OFFICIAL FAXES is (571) 273-8300.

10.3 The fax phone number for AFTER FINAL FAXES is (571) 273-8300.

08/01/05

A handwritten signature in cursive script, reading "Edward Cosimano".

Edward R. Cosimano
Primary Examiner A.U. 3639